

8. Pipelines: If an FPSO is installed, most likely the oil will be sold into the shuttle tanker and no oil pipeline is needed. Most likely the gas will be re-injected because it is not economical to sell or to help maintain reservoir pressure and thus increase the recovery of the oil in place. However it is possible to have oil and/or gas pipelines leave the FPSO and go to a shallow water platform on shore. TLPs, spars and semi-submersibles will typically have an oil pipeline and/or a gas pipeline which eventually has to go to shore.

Pipelines are normally buried in less than 200 to 300 feet of water, and beach crossings are horizontally drilled eliminating the need for dredging near the beach. There will also be a drilled crossing on the bay side of the barrier island and one where the pipeline comes onshore.

On the barrier island there will probably be an above-ground valve station to allow isolation of the segments of the pipeline but no facilities. Onshore at some point a gas pipeline will need a compressor booster station (typically electric motor driven centrifugal compressors in buildings). Similarly an oil pipeline will need a pump station which will consist of one or more tanks and electric motor driven centrifugal pumps in a building.

9. Construction, Maintenance and Operations: During construction, maintenance and operations, supplies and materials will be necessary. These will be provided from the nearest port which is big enough for an offshore supply boat (about the size of a deepwater fishing vessel) with enough land available to support a supply base, warehouse and helicopter support facility. Much construction of offshore rigs, for example, will likely take place at foreign ports. During drilling or operations phases, there will be a crew of 100 to 200 people offshore. Two crews are needed to account for days off. For simultaneous drilling and production activities there will be double this number to support. Most of these workers, as well as those necessary to man the bases, will come from within driving range of the onshore bases.

As the reservoir changes and modifications are needed to the production facilities, there will be the need for fabrication and welding facilities at the onshore base as well as facilities for manufactures to warehouse and support their offshore equipment. The benefits in having these located as close to operations as possible can be seen by the fact that there are five such bases along the Louisiana coast (Venice, Port Fourchon, Morgan City, New Iberia and Lake Charles).

10. Product Disposition: If oil is transmitted by pipeline to shore, it would most likely be piped directly to an existing refinery or crude oil pipeline system. Due to the nation's need for crude oil to feed existing refineries, it is not likely that this crude will form the feedstock for a new refinery complex.

If crude and condensate production is too low to economically justify a pipeline for transport to a refinery, the crude from the pipeline could be delivered to a terminal for marine, train or truck transport. Marine, train or truck transport is not considered likely from an oil field discovery, as significant crude production would be required to justify development of the offshore resource as well as to payout the pipeline to shore.

If a gas field is discovered and production is delivered directly from the wells in multiphase pipelines to an onshore separation facility, it is possible that production of condensate (hydrocarbon liquids condensed from natural gas) could be low enough to make marine, train or truck transportation an economical solution.

Gas delivered by pipeline to shore, either through a multiphase or a separate gas pipeline, would be connected by pipeline into an existing interstate or intrastate pipeline system. The availability of new supplies of natural gas for use as a chemical feedstock could lead to the development of chemical process plants. Such plants could produce products such as ammonia, fertilizer, and the building blocks of various plastics.

11. Decommissioning and Abandonment: At the end of its life any facility will need to be decommissioned and abandoned. Rules and regulations exist for decommissioning and abandonment of offshore installations and pipelines. Wells have to be plugged (cemented) and abandoned to a specified depth below the sea floor so as not to interfere with other uses of the sea and not to provide conduits for flow between strata. No wellheads or other pipes can be left sticking up above the sea floor. Floating facilities will either be refurbished and reused at another site somewhere in the world, or taken to shore for salvage.